JACC

March 1, 2011
Volume 57, No. 9

Journal of the American College of Cardiology

Inside This Issue

STATE-OF-THE-ART PAPER

CLINICAL RESEARCH

(continued on page A-21)

CARDIAC SURGERY

Aspirin Resistance Increases the Risk of Early Vein Graft Thrombosis After CABG Surgery 1069

Tyler J. Gluckman, Rhondalyn C. McLean, Steven P. Schulman, Thomas S. Kickler, Edward P. Shapiro, John V. Conte, Kathleen W. McNicholas, Jodi B. Segal, Jeffrey J. Rade

The RIGOR (Reduction in Graft Occlusion Rates) trial sought to determine whether an incomplete response to and/or inadequate antiplatelet effect of aspirin increases the risk of saphenous vein graft (SVG) occlusion after coronary artery bypass graft (CABG) surgery. Aspirin responsiveness and platelet reactivity were characterized 3 days and 6 months after CABG in subjects on aspirin monotherapy. Risk factors for SVG occlusion included target vessel diameter ≤1.5 mm, short collagen/adenosine diphosphate clotting time, and elevated urine thromboxane derivatives. These results suggest that aspirin-insensitive thromboxane generation and shear-dependent platelet hyper-reactivity are independent risk factors for early SVG thrombosis after CABG surgery.

Editorial Comment: Robert F. Storey, p. 1078

HEART RHYTHM DISORDERS

Etiology of Fractionated Electrograms in the Posterior Left Atrium During AF 1081

Felipe Atienza, David Calvo, Jesús Almendral, Sharon Zlochiver, Krzysztof R. Grzeda, Nieves Martínez-Alzamora, Esteban González-Torrecilla, Ángel Arenal, Francisco Fernández-Avilés, Omer Berenfeld

Atienza and colleagues studied the mechanisms responsible for the formation of fractionated electrograms on the posterior left atrial wall (PLAW) that have been associated with atrial fibrillation (AF). Sustained AF was induced by pacing from a pulmonary vein (PV), and the transitions between organized patterns and changes in electrogram morphology leading to fractionation were studied. Transitions to fractionation were preceded by significant increases in electrogram duration, spike number, and systolic interval shortening. These results suggest that in paroxysmal AF, electrogram fractionation at the PLAW is a consequence of the dynamic interaction between high-frequency re-entrant sources and the atrial anatomy.

CARDIOMYOPATHY

Cardiovascular Events in Untreated Patients With Fabry Disease 1093

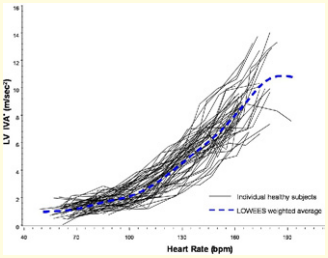
Manesh R. Patel, Franco Cecchi, Marta Cizmarik, Ilkka Kantola, Ales Linhart, Kathy Nicholls, Jörg Strotmann, Jose Tallaj, Thi Chien Tran, Michael L. West, Dana Beitner-Johnson, Ademola Abiose

Fabry disease is an X-linked lysosomal storage disorder, which results in abnormal accumulations of glycosphingolipids within various tissues, including the kidney and heart. Cardiovascular disorders linked to Fabry disease include hypertension, left ventricular hypertrophy, rhythm and conduction abnormalities, and ischemic heart disease. Patel and colleagues analyzed data from a registry of untreated patients with Fabry disease and report that 6% of men and 4% of women experienced cardiovascular events at mean ages of 45 and 54 years, respectively. Heart failure was the most common first cardiovascular event, which was typically preceded by hypertension and left ventricular hypertrophy. These results suggest that all patients with Fabry disease should be monitored for cardiovascular risk factors, particularly hypertension and left ventricular hypertrophy.

(*continued on page A-22*)

PEDIATRIC CARDIOLOGY

Measuring IVA May Improve Detection of Myocardial Dysfunction in Children 1100



Susan Lucy Roche, Michael Vogel, Oli Pitkänen, Brian Grant, Cameron Slorach, Cheryl Fackoury, Derek Stephens, Jeffrey Smallhorn, Lee N. Benson, Paul F. Kantor, Andrew N. Redington

Roche and colleagues sought to determine the normal variation of left ventricular (LV) isovolumic acceleration (IVA) in children as a noninvasive, load-independent index of LV contractility and myocardial reserve. In healthy children, LV IVA was unaffected by age, sex, weight, height, and body surface area, but did correlate with heart rate during recumbent bike exercise, confirming a positive force-frequency relationship (FFR). Several of the children with previous anthracycline exposure demonstrated flattened FFR curves, suggesting reduced contractile reserve. The availability of pediatric normal values for resting LV IVA and FFR may facilitate future investigation of LV contractility and myocardial contractile reserve during childhood.

Editorial Comment: Sándor J. Kovács, p. 1108

EXPEDITED PUBLICATIONS

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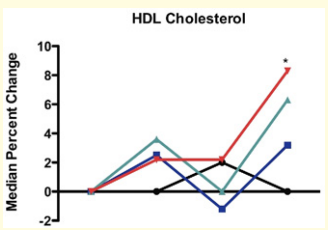
Efficacy and Safety of a Novel Inducer of ApoA-I Synthesis 1111



Stephen J. Nicholls, Allan Gordon, Jan Johansson, Kathy Wolski, Christie M. Ballantyne, John J. P. Kastelein, Allen Taylor, Marilyn Borgman, Steven E. Nissen

Apolipoprotein A-I (apoA-I) synthesis generates new high-density lipoprotein cholesterol (HDL-C) particles, which promote reverse cholesterol transport and also exert favorable effects on inflammatory, endothelial, and thrombotic pathways. Nicholls and colleagues randomized almost 300 statin-treated patients with coronary artery disease to placebo or RVX-208, the first oral agent designed to enhance apoA-I synthesis, for 12 weeks. RVX-208 produced dose-dependent increases in apoA-I, HDL-C, and large HDL-C particles. Elevations in liver transaminases >3 times the upper limit of normal were observed in 18 patients treated with RVX-208. Further studies will be necessary to clarify if the increase in apoA-I induced by RVX-208 improves cardiovascular outcomes with acceptable safety.

Editorial Comment: Michael H. Davidson, p. 1120